Flare 8 Root Cause And Corrective Action Analysis Report – NSPS Ja

May 3, 2021

In accordance with Title 40, Part 60, Subpart Ja, provided below is information related to the discharge to the No. 8 Flare in excess of 500 lbs in a 24-hour period in accordance with §60.103a(c) and the recordkeeping and reporting requirements of 40 C.F.R. §60.108a(c)(6). This report also includes information required under the Consent Decree entered in United States, et al. v. HOVENSA, LLC, Civ. No. 1:11-cv-0006.

a. A description of the discharge [40 CFR §60.108a(c)(6)(i)]

Flare #8 experienced SO_2 emissions in excess of the 500lbs in a 24-hour period on May 3, 2021 from 13:00 hours to 21:59 hours. Unstable feed quality; light feed material, during the startup of the Coker Debutanizer Tower (T-8507) caused pressure buildup in the tower resulting in the pressure safety valve (PSV 2919) to vent to the No. 8 Flare. The PSV vented from approximately 13:40 hours to 14:00 hours.

b. The date and time the discharge was first identified and the duration of the discharge [40 CFR §60.108a(c)(6)(ii)] & [Consent Decree Paragraph 60.a]

The discharge was first identified on May 3, 2021 at 13:00 hours and lasted until 21:59 hours.

c. The measured or calculated cumulative quantity of gas discharged over the discharge duration. Include measured H_2S, Total sulfur, SO_2, and flow rate as applicable. [40 CFR §60.108a(c)(6)(iii)-(vii)] and calculations used to determine the quantity of SO_2 that was emitted. [Consent Decree Paragraph 60.b]

Appendix 1 to this document includes the data recorded by the data acquisition and handling system related to the continuous monitoring system located at Flare 8. SO_2 emissions are calculated using the total reduced sulfur quantity measured by analyzer in the flare header, the total flow to the flare, and a 99% conversion of total sulfur to SO_2 per 40 CFR §60.108a(c)(6)(vii.)

d. The steps taken to limit the emissions during the discharge and the duration of the discharge. [40 CFR §60.108a(c)(6)(viii)] and [Consent Decree Paragraph 60.c]

The duration of the event was 9 hours as described in "b" and "c" above. Operations decreased the steam flow to the Coker Debutanizer reboilers (8500-E-8510 A/B) which reduced the reboiler outlet temperature. Combined with increased reflux flow, this helped to bring the pressure down, and allowed PSV-2919 to reseat.

e. The root cause analysis and corrective action analysis including an identification of the affected facility, the date and duration of the discharge, a statement noting whether the discharge resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary. [40 CFR §60.108a(c)(6)(ix)] and [Consent Decree Paragraph 60.d]

1. *The release occurred from Flare 8, an affected facility under NSPS, Subpart Ja.*

2. *The duration of the event was 9 hours as described in "b" and "c" above.*
3. *This discharge did not result from a similar root cause identified in a previous analysis*
4. *The root cause analysis:*

Root Cause Analysis	*Corrective Action Analysis (or explanation that no corrective is necessary)*	*Status: completed within 45 days or schedule with proposed implementation and completion dates*
The Coker Debutanizer (T-8507) experienced unstable feed quality during tower startup	• *Decreased steam flow to the Debutanizer reboilers (8500-E-8510 A/B)* • *Increased T-8507 reflux flow*	*Completed within 45 days*

f. An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of the discharge resulting from the same root cause or significant contributing causes in the future. The analysis shall discuss all reasonable alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. [Consent Decree Paragraph 60.e]

The following corrective measure is available to reduce the likelihood of a recurrence:

- *Maintain the pressure, level, and temperature of T-8507 and Coker Stripper Bottom Tower (T-8504) within the operating envelope.*

No other analysis was performed.

g. For Acid Gas Flaring Incidents (not Hydrocarbon Flaring Incidents), specifically identify each of the grounds for stipulated penalties in paragraphs 63, 64 and 65 and describe whether the Incident falls under any of those grounds. [Consent Decree Paragraph 60.f]

This was not an acid gas event.

h. For any corrective action analysis for which corrective actions are required, a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates. [40 CFR §60.108a(c)(6)(x)] and [Consent Decree Paragraph 60.h for supplement report]

See response to "e" above.

i. If the analysis determines that corrective action is not required, the report shall explain the basis for that conclusion. [Consent Decree Paragraph 60.e]

See response to "e" above.

j. For each discharge from a flare that is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the flare, a statement that a root cause analysis and corrective action analysis are not necessary because the owner or operator followed the flare management plan. [40 CFR §60.108a(c)(6)(xi)]

Not applicable.

Appendix 1 – DAHS Records

Source		FLARE08			
Parameter (Unit)		H2SPPMD (PPM) 001H	H2SPPMD (PPM) 003H	SO2LBS (LBS) 001H	SO2LBS (LBS) 024H
05/03/21	11:00	75.2	85.2	5.4	490.9
05/03/21	12:00	69.8	75.8	5.5	491.1
05/03/21	13:00	3,162.6	1,102.6 E	109.0	594.8 E
05/03/21	14:00	362.7	1,198.4 E	13.4	602.7 E
05/03/21	15:00	69.5	1,198.3 E	5.7	602.6 E
05/03/21	16:00	88.0	173.4 E	4.9	601.6 E
05/03/21	17:00	67.5	75.0	5.1	601.5 E
05/03/21	18:00	62.7	72.7	4.7	598.1 E
05/03/21	19:00	70.0	66.7	4.9	581.0 E
05/03/21	20:00	74.2	69.0	5.1	546.4 E
05/03/21	21:00	74.1	72.8	5.2	505.2 E
05/03/21	22:00	73.5	73.9	5.0	475.7
05/03/21	23:00	73.6	73.7	4.7	447.6

F = Unit Offline
E = Exceedance
C = Calibration
S = Substituted
U - Startup
I = Invalid
M = Maintenance
T = Out Of Control
* = Suspect
D - Shutdown